



# GET THE FACTS

## THE TRUTH ABOUT CLOVER IMAGING GROUP'S (CIG'S) REMANUFACTURED CARTRIDGES AND ENVIRONMENTAL SUSTAINABILITY

You may know that CIG's high quality imaging supplies save you money, but do you know the positive ecological impact you have when you choose remanufactured imaging supplies over new OEM cartridges?

### TRUTH - CIG remanufactured imaging supplies reduce landfill waste and pollution.

It is estimated that in the United States alone, over 350 million laser and ink printer cartridges are landfilled or incinerated each year<sup>1</sup>. Each discarded laser cartridge adds approximately 2 pounds of metal and plastic waste to our landfills - waste that will take as long as 1,000 years to decompose.<sup>2, 3</sup>

When you choose responsibly remanufactured cartridges, you reduce these unnecessary environmental threats and subsequent health risks. Since 2009, CIG has collected over 360 Million cartridges.<sup>4</sup>

### TRUTH - CIG remanufactured ink and toner cartridges conserve non-renewable natural resources and have a significantly smaller carbon footprint than new cartridges.

A study by Best Foot Forward, commissioned by the Centre for Remanufacturing and Reuse, reported these findings, "A mono toner cartridge can be remanufactured on average 3.5 times, meaning the carbon footprint from the production of the original cartridge is amortized over this extended lifetime. This needs to be added to the carbon footprint to gain an overall remanufacturing footprint. Based on these assumptions the carbon footprint of a remanufactured cartridge is approximately 2.8 kg, which is 2 kg (46%) lower than that for a new cartridge."<sup>5</sup> In addition, the large number of reused components in the remanufacturing process significantly reduces the carbon impact of the production of components. This feeds through to packaging, transport and energy use.<sup>6</sup>

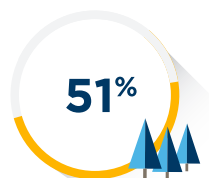
### HERE IS HOW CIG REMANUFACTURED TONER CARTRIDGES COMPARE TO THE OEM EQUIVALENTS<sup>7</sup>



less materials consumed



less natural resources consumed



smaller total environmental impact



smaller energy demand





CIG remanufactured cartridges dramatically reduce the consumption of natural resources and ecologically-damaging fossil fuels.

**TRUTH - CIG remanufactures in North America**

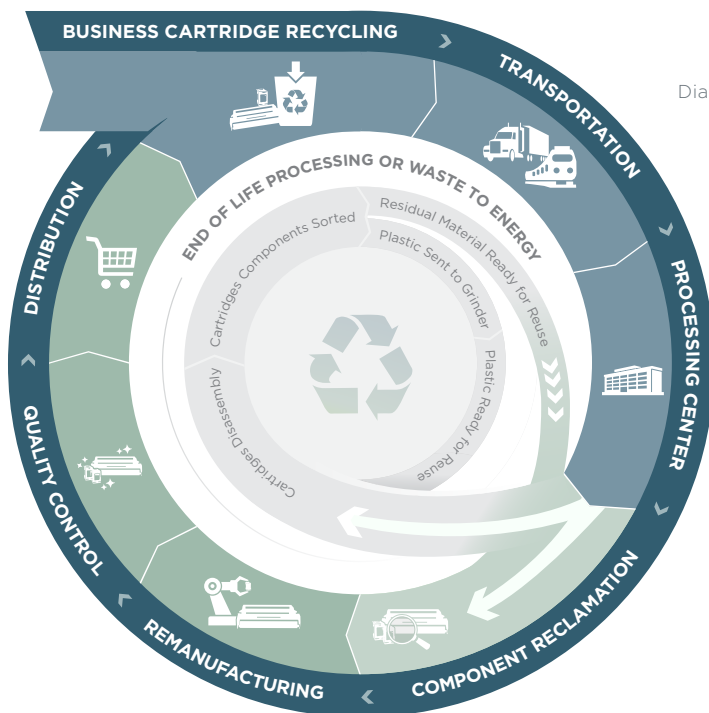
Have you ever closely read the label on the back of your toner cartridge's box to see where it was manufactured? CIG chooses to manufacture in North America. This enables us to conserve fossil fuels through a shorter supply chain, closely monitor product quality and streamline our remanufacturing and recycling processes while also supporting local economies and keeping jobs in North America. CIG is an EPA WasteWise partner and our recycling facilities have multiple environmental certifications including ISO 14001:2004 and Responsible Recycling (R2) certification.

**TRUTH - Empty cartridges that cannot be remanufactured are responsibly recycled.**

CIG evaluates every empty cartridge that is received - first for refurbishment and secondarily for material recovery through recycling. A remanufacturable cartridge is disassembled and as many components as possible are reused. In 2015 alone, CIG was able to salvage 6.1 million components.<sup>8</sup>

Cartridges that are non-remanufacturable are disassembled, sorted into material types and recycled. Our Closed-Loop Environmental Process (see Diagram 1) ensures that virtually every component of the empty cartridges collected is either remanufactured or responsibly recycled.

Clover's intellectual property portfolio now consists of 62 issued patents and 27 patents pending (U.S. and foreign). Many of the technological advances described in these patents focus specifically on promoting the efficient use of resources by facilitating the reuse of existing components during remanufacturing operations.<sup>9</sup>



## CIG REMANUFACTURED CARTRIDGES PERFORM AS WELL AS OEM CARTRIDGES

Third-party tests by Buyers Laboratory (BLI), a leading global independent office equipment test lab and business consumer advocate, evaluated the page yield, image quality, and reliability performance of CIG toner cartridges and compared it to the performance of original HP cartridges.

### BLI's Independent Testing Showed

- Average continuous yields EXCEEDED THE STATED YIELDS across all cartridge types
- **ZERO** out-of-box failures <sup>10</sup>
- ALL cartridges performed to their full life cycle
- **ZERO** unusable pages
- Densities highly comparable to the OEM

### TRUTH - Remanufacturing is the most environmentally responsible choice.

When a cartridge is remanufactured, it is reused. Reuse is the highest form of environmental responsibility. It is superior to recycling in that it does not use non-renewable resources to breakdown plastic and metal. A cartridge and all its components should always first be evaluated for refurbishment. If refurbishment is not possible then responsible recycling should be pursued.

This stance is echoed by multiple government agencies including the Environmental Protection Agency, who states in their Recovered Materials Advisory Notice (RMAN), "that procuring agencies establish procedures and policies that give priority to remanufacturing the agencies' expended toner cartridges. EPA recommends that, under such policies and procedures, procuring agencies procure remanufacturing services for expended cartridges and, when such services are unavailable or not practicable, obtain remanufactured toner cartridges or new toner cartridges made with recovered materials from product vendors." <sup>11</sup>

**CIG partners with PrintReleaf™ to certifiably reduce the environmental impact of printing.** Through our partnership with PrintReleaf™, dealers are able to replace what they take from the world's forests by planting trees across a global network of reforestation projects. Offered as part of our Eco-Services Platform, PrintReleaf™ easily integrates with our Axess MPS program as a way for our dealers and their end users to quantify and offset their forest products consumption and communicate the impact of their sustainability initiatives. Since 2015, CIG dealers have offset the consumption of 675 million sheets of paper with the planting of over 81,000 trees.<sup>12</sup>

*We believe that continual improvement of environmental sustainability is achieved through a combination of rigorous process management, employee empowerment, and accountability. In accordance with this philosophy, Clover publishes an annual Sustainability Report.*

To view our most recent report please visit:  
[http://www.cloverimaging.com/sustainability\\_report/](http://www.cloverimaging.com/sustainability_report/)





## References

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1. "Toner Cartridges: Overview." Responsible Purchasing Network, [http://www.responsiblepurchasing.org/purchasing\\_guides/toner\\_cartridges/index.php](http://www.responsiblepurchasing.org/purchasing_guides/toner_cartridges/index.php).
2. Average toner cartridge weight determined by a breakdown conducted in 2010 of all cartridges collected by Clover Environmental Solutions (CES).
3. R. Terkar, H. Vasudevan, V. Kalamkar, "Remanufacturing for Sustainable Development: Key Challenges, Elements, and Benefits." International Journal of Innovation, Management and Technology, Vol. 3, No. 1, February 2012.
4. Based on 2009-2015 Clover Sustainability Report figures.
5. "The Carbon Footprint of Remanufactured Versus New Mono-Toner Printer Cartridges." Best Foot Forward commissioned by the Centre for Remanufacturing and Reuse.
6. "The Carbon Footprint of Remanufactured Versus New Mono-Toner Printer Cartridges." Best Foot Forward commissioned by the Centre for Remanufacturing and Reuse.
7. Data from a 2010 Clover-funded Life Cycle Analysis (LCA) conducted by RIT. LCA data has not yet been publicly released.
8. 2015 Clover Sustainability Report.
9. 2015 Clover Sustainability Report.
10. 2016 Independent study performed by Buyers Laboratory (BLI), commissioned by Clover Imaging Group.
11. US Environmental Protection Agency, "Consolidated Recovered Materials Advisory Notice (RMAN) for the Comprehensive Procurement Guideline (CPG)." September 2007.
12. Tracked and reported by PrintReleaf™. April 2017.



### FOR ADDITIONAL INFORMATION

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